U.S. DEPARTMENT OF THE INTERIOR **OPEN-FILE REPORT 98-763** U.S. GEOLOGICAL SURVEY SHEET 1 OF 1 Appalachian Basin Bituminous Coal: Weight Percent Sulfur of Produced Coal by County, As Received at the Power Plant SULFUR CONTENT, POUNDS PER MMBTU By Emil D. Attanasi and Robert C. Milici Northern Appalachia Digital Compilation by William C. Kallander and Woody G. Wallace **Figure 1.** Cumulative distribution of produced coal by sulfur content, in pounds per million Btu (MMBtu), of coal delivered to power plants in 1985 and 1995 from northern Appalachia. Data are from Form 423," Monthly report of cost and quality of fuels for electric plants," (1985 and 1995) compiled by the Federal Energy Regulatory Commission. Vertical dashed line shows Phase II emission standard. **Discussion** This map shows the average sulfur content of produced coal by county 0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 from the Appalachian basin received at power plants from 1983 through SULFUR CONTENT, POUNDS PER MMBTU 1995. The county level sulfur coal quality data are displayed on a base map of the Appalachian basin with outlines of the watersheds (in blue). County level data does not reflect finer details of the spatial and stratigraphic distribution of the sulfur content of the coal. Instead, they represent the average values of sulfur content delivered to power plants from mines in **Figure 2.** Cumulative distribution of produced coal by sulfur content, in pounds per million Btu (MMBtu), of coal delivered to power plants in 1985 and 1995 from central Since 1983, the Federal Energy Regulatory Commission (FERC) has Appalachia. Data are from Form 423," Monthly report of cost and quality of fuels for required power plants of least 50 megawatts capacity to report the following electric plants," (1985 and 1995) compiled by the Federal Energy Regulatory coal data: county of origin, mine/operator, tonnage received, and quality of Commission. Vertical dashed line shows Phase II emission standard. coal. The coal quality data include calorific value (Btu/lb.), weight percent sulfur, and weight percent ash. Specifically, FERC collects the coal quality data at power plants with FERC Form 423, "Monthly report of cost and quality of fuels for electric plants." For the purpose of making this map, we compiled these data for the years 1983 through 1995 to calculate the average weight percent of all shipments for each county. The original data are presented in Table 1. Although much of the coal received at the power plants from mines in the Appalachian basin is washed, the data collected by FERC does not distinguish between washed and unwashed coal. Figures 1, 2, and 3 show the percentages of cumulative tonnage versus **Produced Coal Sulfur** sulfur grade expressed in pounds per million Btu for Northern Appalachia, Central Appalachia, and Southern Appalachia, respectively. Northern **Content in Weight Percent** Appalachia includes Pennsylvania, Ohio, Maryland, and northern West Virginia. Central Appalachia includes southern West Virginia, eastern for 1983-1995 Kentucky, and southwestern Virginia. Southern Appalachia consists of the counties in Tennessee, Georgia, and Alabama. The vertical dashed line at 0.6 Greater Than 3 pounds per million Btu is roughly the standard required for emissions set in Phase II of the 1990 Clean Air Act Amendments that will take effect in 2000. 2.5 - 2.99 In 1995, coal shipments received at power plants from Northern Appalachia, 2 - 2.49 Central Appalachia, and Southern Appalachia amounted to about 100 million, 160 million and 17 million short tons, respectively. 0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 1.5 - 1.99 SULFUR CONTENT, POUNDS PER MMBTU Coal quality data shown in table 1 were used with ArcView software to prepare the map. The base map was obtained from U.S. Geological Survey Southern Appalachia 1 - 1.49 1:2,000,000 DLGs. Water basin coverage was obtained from the 1:2,000,000 *─* 1985 **←** 1995 0.001 - 0.99 Hydrologic Unit Map of the Conterminous United States (Allord, G.J., 1992, http://water.usgs.gov/lookup/getspatial?huc2m). No data **Figure 3.** Cumulative distribution of produced coal by sulfur content, in pounds per million Btu (MMBtu), of coal delivered to power plants in 1985 and 1995 from southern Watersheds Appalachia. Data are from Form 423," Monthly report of cost and quality of fuels for electric plants, " (1985 and 1995) compiled by the Federal Energy Regulatory 1: 2,500,000 Commission. Vertical dashed line shows Phase II emission standard. This map is preliminary and has not been reviewd for conformity with U.S. Geological Survey editorial standards. Any use of trade, product or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.